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# New England Biolabs
# Certificate of Analysis

| | |
|---|---|
| *Product Name:* | *XhoI* |
| *Catalog Number:* | *R0146S* |
| *Concentration:* | *20,000 U/ml* |
| *Unit Definition:* | *One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA (HindIII digest) fragments in rCutSmart Buffer in 1 hour at 37°C in a total reaction volume of 50 µl.* |
| *Packaging Lot Number:* | *10261385* |
| *Expiration Date:* | *05/2026* |
| *Storage Temperature:* | *-20°C* |
| *Storage Conditions:* | *10 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 200 µg/ml rAlbumin (pH 7.4 @ 25°C)* |
| *Specification Version:* | *PS-R0146S/L/E v3.0* |

| **XhoI Component List** | | | |
|---|---|---|---|
| **NEB Part Number** | **Component Description** | **Lot Number** | **Individual QC Result** |
| R0146SVIAL | XhoI | 10242323 | **Pass** |
| B7024AVIAL | Gel Loading Dye, Purple (6X) | 10245419 | **Pass** |
| B6004SVIAL | rCutSmart™ Buffer | 10256011 | **Pass** |

| **Assay Name/Specification** | **Lot # 10261385** |
|---|---|
| **Blue-White Screening (Terminal Integrity)**<br>A sample of Litmus 28i vector linearized with a 10-fold excess of XhoI, religated and transformed into an E. coli strain expressing the LacZ beta fragment gene results in <1% white colonies. | **Pass** |
| **Endonuclease Activity (Nicking)**<br>A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of supercoiled pBR322 DNA and a minimum of 100 units of XhoI incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis. | **Pass** |
| **Exonuclease Activity (Radioactivity Release)**<br>A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of a mixture of single and double-stranded [ $^3$H] E. coli DNA and a minimum of 100 units of XhoI incubated for 4 hours at 37°C releases <0.1% of the total radioactivity. | **Pass** |
| **Functional Testing (15 minute Digest)**<br>A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of Lambda-HindIII DNA and 1 µl | **Pass** |

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| Assay Name/Specification | Lot # 10261385 |
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| of XhoI incubated for 15 minutes at 37ºC results in complete digestion as determined by agarose gel electrophoresis. | |
| **Ligation and Recutting (Terminal Integrity)**<br>After a 10-fold over-digestion of pXba DNA with XhoI, >95% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16ºC. Of these ligated fragments, >95% can be recut with XhoI. | **Pass** |
| **Non-Specific DNase Activity (16 Hour)**<br>A 50 µl reaction in rCutSmart™ Buffer containing 1 µg of Lambda-HindIII DNA and a minimum of 100 units of XhoI incubated for 16 hours at 37ºC results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis. | **Pass** |
| **Protein Purity Assay (SDS-PAGE)**<br>XhoI is >95% pure as determined by SDS PAGE analysis using Coomassie Blue detection. | **Pass** |
| **qPCR DNA Contamination (E. coli Genomic)**<br>A minimum of 20 units of XhoI is screened for the presence of E. coli genomic DNA using SYBR® Green qPCR with primers specific for the E. coli 16S rRNA locus. Results are quantified using a standard curve generated from purified E. coli genomic DNA. The measured level of E. coli genomic DNA contamination is ≤ 1 E. coli genome. | **Pass** |

This product has been tested and shown to be in compliance with all specifications.

One or more products referenced in this document may be covered by a 3rd-party trademark. Please visit www.neb.com/trademarks for additional information.

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Production Scientist
10 May 2024

Michael Tonello
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04 Nov 2024